

Title (en)

Apparatus and method for improving the audibility of specific sounds to a user

Title (de)

Vorrichtung und Verfahren zur Verbesserung der Hörbarkeit spezifischer Töne für einen Benutzer

Title (fr)

Appareil et procédé permettant d'améliorer l'audibilité de sons spécifiques à un utilisateur

Publication

**EP 2787746 A1 20141008 (EN)**

Application

**EP 13162514 A 20130405**

Priority

EP 13162514 A 20130405

Abstract (en)

There is provided a method of operating a device to generate a target sound that is audible to a user of the device, the method comprising measuring the background noise in the environment in which the device is located; using a perceptual loudness model to predict the audibility of the target sound to a user of the device based on the measured background noise; using the output of the perceptual loudness model to determine a gain value that is to be applied to a source signal used to generate the target sound in order to provide at least a desired level of audibility of the target sound to the user; applying the determined gain value to the source signal to produce a modified source signal; and generating the target sound using the modified source signal.

IPC 8 full level

**G08B 3/00** (2006.01); **G08B 29/28** (2006.01); **H03G 3/32** (2006.01); **H04R 3/04** (2006.01); **H04R 29/00** (2006.01)

CPC (source: EP RU US)

**G08B 3/10** (2013.01 - EP US); **G08B 29/28** (2013.01 - EP US); **H03G 3/32** (2013.01 - EP RU US); **H04R 3/04** (2013.01 - EP US); **H04R 29/00** (2013.01 - US); **H04R 29/007** (2013.01 - EP US); **H04R 27/00** (2013.01 - EP US); **H04R 2227/001** (2013.01 - EP US); **H04R 2430/01** (2013.01 - EP US)

Citation (applicant)

MOORE B.C.J.; GLASBERG B.R.; BAER T.: "A model for the prediction of thresholds, loudness, and partial loudness", J. AUDIO ENG. SOC., vol. 45, no. 4, 1997, pages 224 - 240

Citation (search report)

- [XY] US 2008161063 A1 20080703 - SCHUSTER ADRIAN M [US], et al
- [X] EP 2088802 A1 20090812 - OTICON AS [DK]
- [A] US 7245226 B1 20070717 - THANHAUSER ALBERT S [US], et al
- [Y] MOORE B C J ET AL: "A MODEL FOR THE PREDICTION OF THRESHOLDS, LOUDNESS, AND PARTIAL LOUDNESS", JOURNAL OF THE AUDIO ENGINEERING SOCIETY, AUDIO ENGINEERING SOCIETY, NEW YORK, NY, US, vol. 45, no. 4, 1 April 1997 (1997-04-01), pages 224 - 240, XP000700661, ISSN: 1549-4950

Cited by

CN108271100A; EP4336489A1; CN107427622A; AU2016243970B2; EP3764331A1; WO2016160266A1; US11127413B2; US9814817B2; US10207040B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2787746 A1 20141008**; BR 112015022131 A2 20170718; CN 105075289 A 20151118; CN 105075289 B 20181016; EP 2974371 A1 20160120; JP 2016510198 A 20160404; JP 6297609 B2 20180320; RU 2015143509 A 20170419; RU 2015143509 A3 20180313; RU 2670182 C2 20181018; US 2016005308 A1 20160107; US 9799210 B2 20171024; WO 2014140053 A1 20140918

DOCDB simple family (application)

**EP 13162514 A 20130405**; BR 112015022131 A 20140312; CN 201480014040 A 20140312; EP 14711191 A 20140312; EP 2014054757 W 20140312; JP 2015562099 A 20140312; RU 2015143509 A 20140312; US 201414769122 A 20140312